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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,492	11/27/2001	Hongyong Zhang	740756-2394	1546

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NIXON PEABODY, LLP  
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SUITE 900  
WASHINGTON, DC 20004-2128

EXAMINER
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KEBEDE, BROOK

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

### Office Action Summary

**Application No.**

09/993,492

**Applicant(s)**

ZHANG ET AL.

**Examiner**

Brook Kebede

**Art Unit**

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-34 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27 of U.S. Patent No. 5,403,772. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

The claimed subject matter of the instant application, i.e., "A method of manufacturing a semiconductor device comprising the steps of: forming a semiconductor film comprising silicon over a substrate; first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and second crystallizing the semiconductor film comprising silicon in an atmosphere comprising hydrogen after the first crystallizing step," as recited in claim 1, "A method of manufacturing a semiconductor device comprising the steps of: forming a semiconductor film comprising silicon over a substrate; first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and second crystallizing the semiconductor film comprising silicon in an atmosphere comprising nitrogen after the first

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crystallizing step,” as recited in claim 6, “A method of manufacturing a semiconductor device comprising the steps of: forming a semiconductor film comprising silicon over a substrate; first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and second crystallizing, the semiconductor film comprising silicon in an atmosphere comprising hydrogen after the first crystallizing step, wherein each of the first and the second crystallizing steps is conducted at a temperature between 500 and 800°C,” as recite in claim 11, “A method of manufacturing a semiconductor device comprising the steps of: forming a semiconductor film comprising silicon over a substrate; first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and second crystallizing -the semiconductor film comprising silicon in an atmosphere comprising nitrogen, wherein each of the first and the second crystallizing steps is conducted at a temperature between 500 and 800 °C,” as recited in claim 16, “A method of manufacturing a semiconductor device comprising the steps of: forming a semiconductor film comprising silicon over a substrate; selectively forming a cover film over the semiconductor film comprising silicon; first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and second crystallizing the semiconductor film comprising silicon in an atmosphere comprising hydrogen, after the first crystallizing step” as recited in claim 21, and “A method of manufacturing a semiconductor device comprising the steps of forming a semiconductor film comprising silicon over a substrate; selectively forming a cover film over the semiconductor film comprising silicon; first crystallizing the semiconductor film comprising silicon in an atmosphere comprising oxygen; and second crystallizing the semiconductor film comprising silicon in an atmosphere comprising nitrogen after the first crystallizing step,” as recited in claim 28, is claimed in claims 1-27 of U.S. Patent 5,403,772.

Furthermore, the claimed limitations of claims 2-5, 7-10, 12-15, 17-20, 22-27, and 29-34 within the scope of the claimed limitations in claims 1-27 of U.S. Patent 5,403,772.

Claims 2-5, 7-10, 12-15, 17-20, 22-27, and 29-34 also rejected as being dependent of the rejected independent base claims.

***Response to Arguments***

3. Applicants' arguments filed on October 8 2003 have been fully considered but they are not persuasive.

Applicants argued that "the '772 patent does not claim, for example, the particular order of crystallizing and the specific type of gas used in each crystallizing step as in Applicants' independent claims. Moreover, the dependent claims of the '772 patent further distinguish from Applicants' claimed invention with additional limitations that are not recited in Applicants' pending claim ..."

In response to the applicant's argument, the Examiner respectfully submits that such an argument is not commensurate with the scope of the claims, in particular, as stated above. In addition, the Examiner respectfully submits that the added limitation, i.e., second crystallizing step is after second crystallizing step, is within the scope of Zhang et al. '772 patent. For example, see Claim 15 of Zhang et al. '772 patent. Claim 15 recites as follows:

**"15. The method for manufacturing a semiconductor device according to claim 14 wherein said atmosphere is changed with time from one of oxygen, nitrogen and hydrogen to another one of oxygen, nitrogen and hydrogen during said seventh step."**

Since claim 15 being depending from claim 14, the first and second annealing step of the instant application claim is equivalent to the seven step of thermal annealing of Zhang et al. '772 patent. Thus, Zhang et al. '772 patent is broad enough cover the claimed invention of the instant application.

Furthermore, the transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948).

Therefore, the rejection under judicially created doctrine of obviousness-type double patenting is still deemed proper.

### ***Conclusion***

4. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

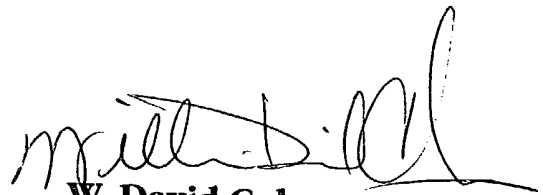
*Correspondence*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (703) 306-4511. The examiner can normally be reached on 8-5 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

BK  
January 7, 2004

  
**W. David Coleman**  
**Primary Examiner**